Testimony of Patrick L. Anderson

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Outline

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I. Findings of AEG Research

1. The electrical grid is a backbone of our economy, and it requires upgrades to remain reliable.

   - The grid today is a complex system of interconnected and interdependent components that provide greater value as a whole than they do as individual parts. The grid's main components are electricity generating plants, high-voltage electrical transmission facilities, local power distribution facilities and lines, and end-user facilities.
   - Despite improvements in recent years, the grid remains insufficient to meet projected demands for reliable, economical, and cleaner energy.
   - Despite being a state of two peninsulas, Michigan is highly connected to the grid, both physically and economically. Multiple transmission lines connect Michigan with Indiana, Ohio, Wisconsin, Ontario, and the rest of the region. Further, the state's manufacturing-intensive economy is dependent on the interstate import and export of finished and unfinished goods, often on a just-in-time basis. Interruptions anywhere on the region's electricity grid can therefore affect Michigan.
   - Transmission of power across the grid is done very economically, accounting for just 7% of the total cost of electricity nationally in 2008. In addition to transmission costs, 68% of the cost per kWh was from the electrical generation, with 24% from local distribution. See Figure 1 on page 9.
   - See Tables 1 through 4 starting on page 6 for an overview of Michigan's sources electricity supply, its top providers, consumption by sector, and consumption compared to other states.

2. The grid began as a disparate collection of local electrical utilities. Over time it has developed into a networked collection of facilities that, with the coordination of regional stakeholders, provides greater reliability, efficiency, and value.

   - FERC and industry stakeholders have developed the Regional Transmission Organization (RTO) framework to maintain and expand the grid. The Midwest Independent Transmission System Operator (MISO) is the RTO that coordinates planning and investment for most transmission infrastructure in the Midwest, including Michigan.
   - Planning transmission projects to expand and strengthen the grid is one of the primary functions of RTOs, and FERC strongly encourages RTOs to determine cost allocation in tandem with investment planning.
   - MISO's governance structure includes representatives from generator owners like Detroit Edison and Consumers Energy, transmission owners like ITC, customers, and other stakeholder groups. This membership elects the MISO board of directors.

- MISO's cost allocation methodology for Multi-Value Projects (MVPs) was developed over a multi-year period with broad membership involvement. The methodology was then approved by MISO's membership-elected board of directors, and found by FERC to align with federal guidelines for assigning costs in a manner commensurate with benefits.
- See Table 5, "MISO Member Classifications," on page 8 for an overview of the groups represented in MISO's leadership.

3. The cost allocation method adopted by MISO and approved by FERC provides a straight-forward model for distributing costs; assigns costs proportionate to use; and is consistent with the cost allocation methodologies used for other complex infrastructures.

   - Transmission project costs have traditionally been assigned directly to the requesting utilities. This has worked well for single-utility, single-state projects, or where it was possible to assign costs to defined market areas.
   - Regional transmission projects, like MVPs, provide difficult-to-quantify and impossible to allocate benefits.
   - Other regional infrastructures with wide reaching benefits are supported using a "postage stamp," or "load-based" cost allocation similar to that adopted by MISO, in which a standard charge is applied to each unit used. Gas taxes, toll roads, and postage stamps are examples.
   - To illustrate the complexity of a formulaic cost allocation, consider having to develop a formula that allocates the cost of the U.S. Postal Service. Instead of flat-rate postage rates based on package weight or letter type, a user's cost would have to be determined using a complex formula to account for factors like distance, speed, weight, size, transport method, route traveled, importance of package, time of delivery, etc.

4. Michigan will receive many benefits from the proposed MVP projects in return for sharing in the costs.

   - Michigan will be the site of the first MVP project in the MISO region. The $510 million Thumb Loop Extension will provide users with access to electricity generated on windfarms in the Thumb, and increase the reliability of the grid throughout the region.
   - MISO has estimated that quantifiable benefits attributable to the 18 initial MVP projects will yield annual benefits ranging from $1.28 billion to $2.42 billion. The benefits will come from lower production costs, less transmission loss, and lowered reserved margins. Further, the benefits will be spread across the region, with the eastern area of MISO (comprised primarily of Michigan's Lower Peninsula, along with small portions of Ohio and Indiana) benefiting most.

- The MVPs promise to generate further value for Michigan in ways that are difficult, if not impossible, to quantify. These benefits include:
  - Reductions in electricity price due to greater access to new supplies.
  - Access to new markets for Michigan generators to sell power.
  - Improved environmental quality, both in Michigan and "upwind" of Michigan in western MISO states.
  - Preparedness for a national energy policy or other event that requires greater usage of alternative energies.
  - Increased opportunities for Michigan businesses, like wind turbine and photovoltaic cell manufacturers, that serve the renewable energy sector.
  - Strengthened economic position of the region and state.
- Michigan's economy, relative to the country as a whole, is more reliant on electricity usage for producing economic outputs, as measured by GDP. Thus, a reliable energy system and a strong regional grid with access to the most cost-efficient sources of energy is very important to the Michigan economy.
- Relative to the MISO region, Michigan's commercial and industrial businesses use less electricity to produce a unit of GDP. As such, the postage stamp allocation method is less burdensome to Michigan's productive capacity than it is to states that use more electricity to generate an equal amount of GDP.
- See Figure 2 on page 10, which compares non-residential electricity sales per unit of GDP for Michigan, MISO as a whole, and the U.S. as a whole.

5. There is no compelling evidence that Michigan's Lower Peninsula, or Michigan as a whole, will be unfairly burdened by the approved cost allocation method.

   - The postage-stamp-to-load cost allocation methodology has a strong practical and theoretical basis, and is widely used in other areas of infrastructure. Furthermore, it was adopted by MISO itself, and approved by an independent federal agency as consistent with the principle that beneficiaries of grid improvements should pay a proportionate share of the costs.
   - Among the handful of written criticisms either submitted to FERC or publicly circulated, there has been scant evidence of any unfairness to Michigan's Lower Peninsula, or Michigan as a whole, of the approved cost-sharing method. Furthermore, no alternative cost-allocation method has been proposed that would clearly benefit Michigan's Lower Peninsula without adding to the burden of the Upper Peninsula, risking rejection by the other parts of the MISO region, or both.
   - Our analysis shows that an allocation based on load is fair considering Michigan's overall place in the MISO territory. For example, Michigan has about 21.7% of MISO's population, 18.9% of MISO's GDP, and 18.3% of MISO's total electricity sales, the latter being representative of load.

6. Modifying the structure of MISO's approved cost allocation methodology for MVPs, by segregating Michigan's Lower Peninsula or by abandoning the load-based charge, threatens to needlessly delay grid improvements and bring about other unintended consequences.

   - MISO and other RTOs have developed frameworks for involving all stakeholders in the process of modernizing the grid. If FERC substantially modifies the order approving the structure of the MVP cost allocation methodology, the integrity of this industry-led governance structure for regional grid management and planning would be threatened.
   - If a new methodology is required to provide separate treatment for Michigan's Lower Peninsula in a way that reduced its share of MVP costs, it is likely that ratepayers in Michigan's Upper Peninsula will see their MVP costs increase as a result.
   - Regardless of the ultimate treatment of Michigan's Lower Peninsula, there are clear costs associated with a delay in allowing projects to move forward. As projects designed to improve reliability and reduce congestion are delayed or foregone, the risks of a blackout or other major disturbance grow. One such disturbance, the 2003 Northeast Blackout, resulted in some $6.4 billion in lost earnings across the economy in just a two-day period.
   - Reopening the discussion on the fundamental structure of the cost allocation methodology will not guarantee a desirable outcome for Michigan. Developing a new methodology could take a year or longer, providing all involved parties the incentive to identify reasons for why they are deserving of a lower cost allocation, and reasons to discount the value of benefits they are assigned under any formula-based methodology.

7. MISO should improve the information available to ratepayers on the costs and benefits of its MVP portfolio.

   - MISO members, including major utilities and transmission companies, had direct representation in the development of the MVP cost-allocation methodology, and will directly participate in the selection and approval of all multi-value projects for which costs will be shared regionally. During this process a set of records has been assembled and made publicly available via the FERC and MISO websites.
   - While MISO has issued a range of information, including specific information about MVPs and the cost allocation, most of the information has been contained in voluminous records and is quite technical in nature. This opens the door to confusion over the costs and benefits of regionally shared projects, as well as invites ill-informed speculation on whether any one state is unfairly burdened.

II. Exhibits From Forthcoming Report

The following exhibits are excerpted from our forthcoming report.

TABLE 1. Michigan Energy Supply, 2009

	Total		*Sources by Entity Type*	
Source	**Amount (GWh)[a]**	**% of Total Use**	*% from Electric Utilities*	*% from Independent Power Producers and Combined Heat and Power*
Coal	66,848	62%	*99%*	*1%*
Petroleum	399	0%	*54%*	*46%*
Natural Gas	8,420	8%	*7%*	*93%*
Other Gases[b]	203	0%	*0%*	*100%*
Nuclear	21,851	20%	*72%*	*28%*
Hydroelectric	1,372	1%	*90%*	*10%*
Other Renewables[c]	2,623	2%	*0%*	*100%*
Pumped Storage	-857	-1%	*100%*	*0%*
Other[d]	344	0%	*9%*	*91%*
Subtotal: Total Michigan Electricity Supply	**101,203**	**94%**	82%	18%
Net International Imports	5,637	5%		
Net Interstate Imports	1,357	1%		
Total[e]	**108,197**	**100%**	*77%*	*17%*

Source: U.S. Energy Information Administration, DOE, Office of Electricity Delivery and Energy; National Energy Board of Canada.

a. GWh statistics do not sum exactly due to rounding.

b. The "Other Gases" category includes blast furnace gas, propane gas, and other manufactured and waste gases derived from fossil fuels.

c. The "Other Renewables" category includes biogenic municipal solid waste, wood, black liquor, other wood waste, landfill gas, sludge waste, agriculture by-products, other biomass, geothermal, solar thermal, photovoltaic energy, and wind.

d. Other includes non-biogenic municipal solid waste, batteries, chemicals, hydrogen, pitch, purchased steam, sulfur, tire-derived fuels and miscellaneous technologies.

e. This number differs from totals listed in US EIA sources due to inclusion of *net international imports* rather than gross imports, as well as inclusion of net interstate trade (imports) in electricity supply, above, rather than consumption, below.

TABLE 2. Electricity Provided by Michigan's Top Five Electricity Retailers, 2009 (MWh)

Entity	Type of Provider	All Sectors	*Residential*	*Commercial*	*Industrial*
Detroit Edison Co	Investor-Owned	42,747,883	*14,625,206*	*18,190,402*	*9,932,275*
Consumers Energy Co	Investor-Owned	33,114,933	*12,385,603*	*11,438,963*	*9,290,367*
Indiana Michigan Power Co	Investor-Owned	2,818,810	*1,218,332*	*815,956*	*784,522*
Wisconsin Electric Power Co	Investor-Owned	2,243,877	*167,887*	*150,279*	*1,925,711*
City of Lansing	Public	2,162,938	*572,786*	*1,222,251*	*367,901*
Total Sales, Top Five Providers		83,088,441	*28,969,814*	*31,817,851*	*22,300,776*
Total Sales in Michigan		98,121,000	*32,854,000*	*37,870,000*	*27,391,000*
Proportion of Total Sales by Top Five		85%	*88%*	*84%*	*81%*

Source: U.S. Energy Information Administration

TABLE 3. Michigan Electricity Consumption by Sector, 2009

User	Amount (GWh)[a]	% of Total Use
Residential	32,854	30%
Commercial	37,870	35%
Industrial	27,391	25%
Transportation	5	0%
Subtotal: Retail Sales	**98,121**	**91%**
Direct Use	1,792	2%
Estimated Losses	8,284	8%
Total Use	**108,197**	**100%**

Source: U.S. Energy Information Administration; National Energy Board of Canada

a. GWh statistics do not sum exactly due to rounding.

TABLE 4. Electricity Consumers and Average Monthly Consumption (kWh) by Sector by MISO State, 2009

	Residential		Commercial		Industrial	
State	**Consumers**	**Consumption**	**Consumers**	**Consumption**	**Consumers**	**Consumption**
Illinois	5,098,579	765	586,611	7,354	6,016	630,308
Indiana	2,733,128	1,036	341,154	6,002	18,099	222,900
Iowa	1,325,990	884	211,241	4,804	6,187	259,106
Kentucky	1,928,082	1,191	296,069	5,536	6,304	610,694
Michigan	4,290,313	666	518,776	6,261	12,776	212,015
Minnesota	2,279,850	817	270,442	6,965	9,097	218,116
Missouri	2,686,746	1,098	371,220	6,985	9,431	157,726
North Dakota	318,760	1,113	56,510	6,577	2,143	143,759
Ohio	4,891,891	910	612,492	6,437	21,201	230,416
South Dakota	363,517	1,010	65,007	5,436	2,984	65,016
Wisconsin	2,579,776	710	333,653	5,863	4,683	439,040
United States	**124,937,469**	**920**	**17,562,726**	**6,339**	**774,713**	**108,567**

Source: U.S. Energy Information Administration, DOE, Office of Independent Statistics and Analysis.

Analysis: Anderson Economic Group LLC

TABLE 5. MISO Member Classifications

Type	Number	Votes on Board of Director Membership?[a]
Transmission owners	36	Yes
Coordination member	1	Yes
Power marketers and brokers	49	Yes
Independent Power Producers (IPPs) and Electric Wholesale Generators (EWGs)	27	Yes
Municipal, Cooperative, and Transmission and Distribution Utility (TDU)	17	Yes
End-user customers	4	Yes
Environmental and other stakeholder groups	5	No
State regulatory authorities	15	No
Public consumer groups	11	No

Source: Midwest ISO, "Members by Sector" April 2011, Available online: https://www.midwestiso.org/Library/Repository/Communication%20Material/Corporate/Current%20Members%20by%20Sector.pdf, (accessed May 2011).

a. MISO's governance structure is set up such that only "member sectors" vote for board on directors nominees.

TABLE 6. Michigan's Share of MISO Region

	Michigan	Michigan portion of MISO	MISO	Michigan Share of MISO
Population (2010)[a]	9,883,640	9,724,269	44,896,542	21.7%
GDP (2009, $billions)[b]	$361.1	$348.3	$1,845.4	18.9%
Total Electricity Sales (2005, Megawatt-hours)[c]	110,444,563	106,519,655	583,500,842	18.3%
Non-Residential Electricity Sales (2005, Megawatt-hours)	74,349,609	71,707,420	389,041,883	18.4%
Memo: Land Area (sq. miles)[d]	*96,716*	*56,061*	*440,286*	*12.7%*

Source: See table footnotes
Analysis: Anderson Economic Group LLC

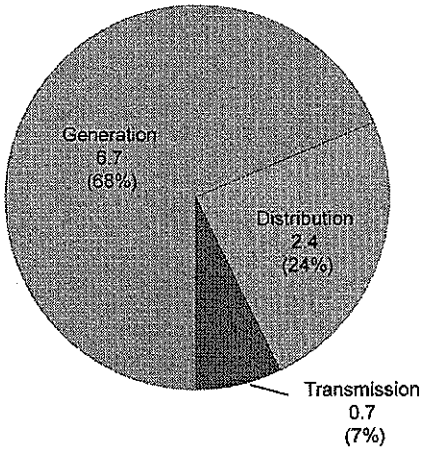
a. AEG analysis of data from U.S. Census Bureau. Based on AEG analysis of MISO region using data from ESRI, Inc.

b. AEG analysis of data from U.S. Bureau of Economic Analysis. Each state's proportion of GDP included in MISO region estimated based on proportion of population served by MISO (see note a).

c. AEG analysis of data from U.S. Energy Information Administration. Each state's proportion of electricity sales included in MISO region based on proportion of population served by MISO (see note a). This analysis uses 2005 as a comparison year as representative of a recent year with a "normal" economy, i.e. not at the trough of an economic downturn or the early years of a recovery.

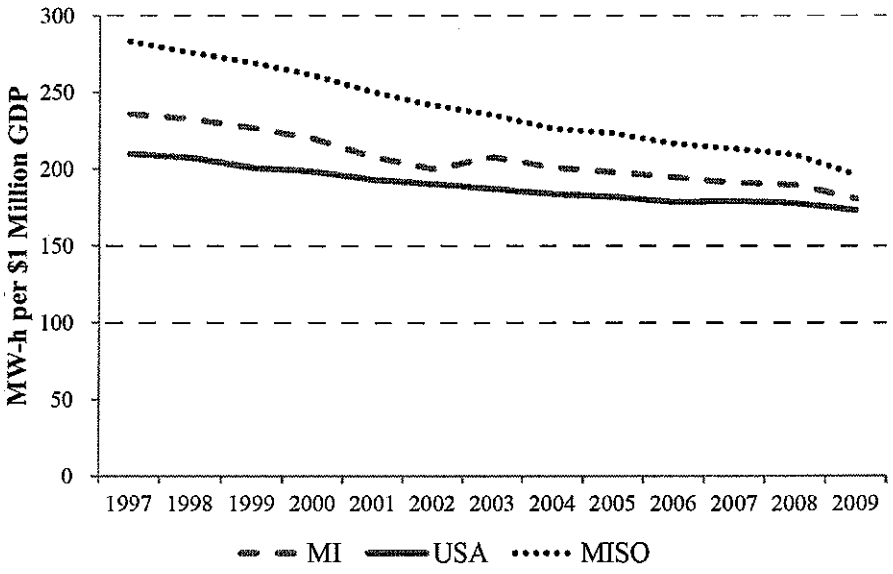
d. AEG analysis of data from U.S. Census Bureau and ESRI, Inc.

FIGURE 1. Major Components of U.S. Average Electricity Price, 2008 (Cents per kWh and Share of Total)



Source: U.S. Energy Information Administration, *Annual Energy Outlook 2010*, Reference Case, Table A8: Electrical Supply, Disposition, Prices, and Emissions, Prices by Service Category (2009).

FIGURE 2. Non-Residential Electricity Sales Per Unit of GDP from 1997 to 2009



Source: Energy Information Administration; Bureau of Economic Analysis; ESRI, Inc.
Analysis: Anderson Economic Group LLC

III. About Patrick L. Anderson and Anderson Economic Group

Mr. Anderson founded Anderson Economic Group in 1996, and serves as Principal and Chief Executive Officer in the company.

Mr. Anderson has taken a leading role in several major public policy initiatives in his home state; he was the author of the 1992 Term Limit Amendment to the Michigan Constitution, and also the author of the 2006 initiated law that repealed the state's 4-decade-old Single Business Tax. Before founding Anderson Economic Group, Mr. Anderson was the deputy budget director for the State of Michigan under Governor John Engler, and Chief of Staff for the Michigan Department of State.

Mr. Anderson has written over 100 published works, including the book Business Economics and Finance and the chapter on business valuation in the book Litigation Economics. He is also the executive editor of three editions of the State Economic Handbook. His 2004 article "Pocketbook Issues and the Presidency" and his 2009 paper "The Value of Private Businesses in the United States" have each been awarded for outstanding writing from the National Association of Business Economics. Anderson's views on the economy are often cited by national news media including The *Wall Street Journal*, *New York Times*, National Public Radio, and Fox Business News.

About Anderson Economic Group, LLC. Anderson Economic Group is an economic research and consulting firm with offices in Michigan and Illinois. The consultants at AEG have completed prior energy industry analyses including impact assessments of construction and operations, residential property value, and long-term costs. Their work has been used to drive new legislation, revise public policy, improve the allocation of public resources, and attract major economic development investments. Since their founding in 1996, AEG experts have served Fortune 100 companies, private firms, state and local governments, trade associations and non-profit organizations. Their work has been cited by the *Wall Street Journal*, Bloomberg, *Forbes*, the *Washington Times*, CNN Money and the *New York Times*.